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SIGNIFICANT DEVELOPMENTS IN THE INLAND TRANSPORTATION
SYSTEMS OF THE EUROPEAN SATELLITES DURING 1962

AND

PROSPECTS FOR THE FUTURE

CIA/RR MP 63-33

(ORR Project 31-3752)

April 1963

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FOREWORD

The 1962 Memorandum on Inland Transport in the European Satellites presents, as have earlier editions, a summary of the more significant developments in inland transport during the year. It will be noted that some of the 1961 statistics are at slight variance with those shown in the previous edition. These variations result from the incorporation of final official statistics for 1961. Reference to significant developments in international civil air transport have also been included in this Memorandum because a separate memorandum on the international aspects of civil air transport will not be published for 1962.

The Memorandum presents comprehensive statistics on the transportation system in a statistical appendix, but only the more significant developments are mentioned in the text. The information was derived mainly from official statistical publications and announcements of the countries concerned, and reports by observers. The specific sources used are available in the files of this office.

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ORR Project 31.3752

SIGNIFICANT DEVELOPMENTS IN THE INLAND TRANSPORTATION
SYSTEMS OF THE EUROPEAN SATELLITES DURING 1962, AND
PROSPECTS FOR THE FUTURE

I. Summary and Significant Developments*

The railroad systems of the European Satellite countries experienced a most troublesome year in 1962, and in none of these countries were planned goals fulfilled. Moreover, with the exception of Rumania, plan failures were freely admitted in official press announcements for the first time in recent years. Although Rumania announced a plan fulfillment of 101 percent in railroad freight traffic, an analysis of the statistics indicates that the original plan announced early in the year was not achieved. The shortfalls in Bulgaria, East Germany and Poland were not large, but Czechoslovakia failed by almost 16 million tons or about 5 percent of the planned total.

The European Satellite economies failed to produce as much as planned for 1962. There were shortfalls in agricultural production as well as in the production of coal, ore, steel and construction materials, and these commodities normally account for more than 60 percent of the total tons carried by the railroads. These failures account to some extent for the lack of significant growth in transportation output, because the production plan is the basis upon which the transportation plan is formulated. On the other hand, there is ample evidence also that the transportation systems and particularly the railroads, failed or were incapable of providing adequate services at all times and places required. Since the railroads provide more than 85 percent of the ton kilometers of freight traffic provided by all modes of inland surface transport, these failures may have inhibited economic growth to some extent.

The European Satellite countries appear to have reached, or are approaching,

* The estimates and conclusions in this memorandum represent the best judgment of this office as of 1 April 1963.

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the plateau of operating efficiency that can be expected under current managerial practices and with the facilities and equipment available. This is particularly true of the railroad systems because the communist concept of planning and management attempts to plan the exact amount of transport service that will be required to fulfill the demands of planned agricultural and industrial production and international trade, with no provision for reserve strength in personnel or equipment to meet contingencies. This is reflected even in day-to-day operations, and when one industry or geographical area over-fulfills the production plan, the railroads are incapable of providing service to move production significantly in excess of plan; while a surplus of transport capacity develops in another area where production is below plan. This was most noticeable in Czechoslovakia during 1962 where improper planning and mismanagement on the part of both the carriers and the users of transport services resulted in wasteful practices in the utilization of equipment and facilities. For example, loaded freight cars were permitted to stand idle for days because shippers had failed to coordinate shipping schedules with receivers, and receivers could not accept consignments which were not in strict accordance with planned schedules for lack of storage space. As a consequence, a serious shortage of freight cars developed and continued throughout the year.

Similar, although less severe shortcomings were noted throughout all of the European Satellite countries. Too much reliance is being placed upon planned utilization and productivity factors such as increasing the average load per freight car and reducing the turnaround time. And too little effort has been made to acquire and maintain an adequate reserve of rolling stock to meet contingencies which naturally arise when planned production and shipping schedules are not strictly adhered to in accordance with plans.

Although the European Satellite countries produced about 26 thousand freight cars in 1961, they exported well over 30 percent of that production with the major portion of the exports going to the USSR and to countries outside the Bloc. If

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they kept all of their production for internal use at the 1961 rate it would require about 27 years to renew the present inventory of slightly over 700 thousand freight cars. Because of the low average load per car (17 tons) and the short average length of haul (207 kilometers), about 273 terminal operations are required to produce a million ton kilometers in the European Satellites. This may be compared with railroad operations in either the US or the USSR where only about 50 terminal operations would be required because the average load per car is twice that in the European Satellites, and the average length of haul is more than three times as great. The geographic relationship of the producing areas with the consuming centers in the European Satellites, however, precludes the possibility of increasing the average length of haul significantly in the immediate future. Also, as the small 2 axle freight car predominates in current freight car production, it is doubtful that the average load per car will increase significantly for some time to come. Moreover, the useful life of a freight car is dependent upon the number of times it is used, -- i.e., loaded, unloaded, switched, -- rather than upon its age or the distance travelled. It is apparent, therefore, that European Satellite freight cars wear out quickly and require frequent maintenance, so it is evident that more cars will be required if the railroads are to keep pace with economic growth because the turnaround time has just about reached the minimum that can be expected under present operating conditions.

At a meeting of the CEMA Transportation Committee in Bucharest in December, a resolution was adopted to establish an international freight car pool within the European Satellites in order to attempt further to achieve better utilization of equipment. Under this plan, each of the railroad systems will contribute a number of freight cars of a specified type and design suitable for long distance international traffic. The cars will be used jointly by all countries, and no car rentals will be charged. Details of this plan have not yet become available. It may be similar, however, to a freight car pool which was established in Western Europe in 1953 under an organization known as Europ. Europ has a freight car pool

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of about 200 thousand cars which are reserved primarily for international traffic, but which may also be used for domestic traffic within a member country. No car rentals are charged. However, cars leaving France for Germany, as an example, are immediately replaced with an equal number of empty or, if possible, loaded Europ cars entering France in the opposite direction. Foreign cars may be used for internal domestic traffic within a member country provided the total number in use does not exceed the number contributed to the pool and which are being used in other member countries. A balance is thereby maintained, empty runs are reduced and members are prevented from using an excessive number of foreign cars for internal traffic.

When Europ was established, the European Satellite railroads were invited to participate but declined, presumably for political rather than economic reasons. The Europ pool has worked well, and a pool can work equally well in the European Satellites. About 70 to 80 thousand cars will be required to implement the plan in the European Satellites, and the railroad administrations anticipate a 20 percent reduction in empty freight car runs in international traffic. This mechanism is probably the only course currently remaining to the European Satellites to attempt to obtain better utilization of freight cars and to alleviate, to some degree, the shortage.

Railroad electrification and dieselization programs in each of the European Satellite countries (except in Albania where no program is underway), are proceeding according to plan. In Czechoslovakia, Hungary, and Poland, priority in electrification is being given to the East-West routes which connect with routes in the USSR. In Bulgaria and Rumania, the electrification currently underway is from North to South, which strongly implies that eventual connections with the USSR have influenced the electrification program planning. Current production of electric and diesel locomotives in the European Satellites is inadequate to supply the types and the quantities needed, and as a consequence, they have been compelled to place orders for motive power in the free world countries of Western Europe.

Construction of the CEPA pipeline is also proceeding according to plan. Both

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the Czechoslovakian and the Hungarian sections are in operation, and over 400 kilometers of the route through Poland to East Germany have been completed. It has been reported that three construction crews are currently working at three sites on the remaining 270 kilometers and that construction will be completed by late 1963. There is no significant new highway construction underway, but reconstruction and surfacing of existing highways is in process in all of these countries.

In spite of plan shortfalls, total freight traffic by railroads, highway, inland waterway and pipeline increased during 1962, but the rate of increase declined sharply compared with earlier years* and there was an absolute decline in passenger traffic for the third consecutive year.** Civil air transport, still in the formative stage in these countries, accounts for only a negligible portion of the freight traffic, and carried only a negligible tonnage during 1962.*** Civil air passenger traffic is growing slowly,**** but the scattered reports available for analysis suggest that the majority of the travelers are either government officials or special groups sponsored by one or another agency of government. The civil air carriers are seeking expansion, however, as evidenced by their negotiations for international air agreements and it is probable that their aircraft will be seen more frequently in various areas of the free world by 1965. A total of 12 new and used aircraft were added to the European Satellite fleets during 1962, while 3 are known to have been lost in crashes. The total inventory at the end of 1962 was only 195 aircraft of various types.[†]

Prospects for fulfillment of transportation plans during 1963 are extremely doubtful at this time. Beginning in late December of 1962 and extending well into

* Appendix, p. 22 and 25 , below.

** Appendix, p. 31 , below.

*** Appendix, p. 19 , below.

**** Appendix, p. 20 , below.

[†] Appendix, p. 21 , below.

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March 1963, a severe cold wave and heavy snow struck Eastern Europe, causing a near paralysis in transportation. An unknown but relatively large number of passenger train services were suspended during this period and those trains which did run were up to 24 hours late. Inland waterways were frozen solid. By far the most dramatic aspect of the transportation tie-up was the inability of the railroads to deliver coal from the mines to the consuming centers. Coal stored at the mines froze solid, and explosives were required to loosen it before it could be loaded into freight cars. Strip mining in East Germany all but ceased until troops were called out to loosen the deposits with explosives. After loading into freight cars, the coal froze again and had to be picked out with hand tools. Railroad switches froze, derailments were frequent, and snowdrifts stalled trains for hours. A food shortage developed in the larger cities. Thousands of trucks, including military trucks with military drivers, were pressed into service to move coal and food.

The failure of the transportation system to move adequate supplies of coal forced a reduction in power output, and some steel mills as well as other heavy industries, were forced to curtail production. According to various press reports, the losses suffered by the economies during the first quarter of 1963 may have eliminated any possibility of achieving any significant industrial growth during 1963. Although part of the difficulty in coal transport was in loading and unloading, various press articles have implied that the primary difficulty was with the transportation system and the inability of the railroad system to supply equipment at the times and places needed.

Here again is evidence of mismanagement and poor planning in the transportation systems. The situation further points up the fact that the railroad systems operate with such slim margins of reserves in normal times that almost any emergency tends to create a serious situation. This leads to speculation on how the transportation systems would cope with a military emergency situation without at least temporarily embargoing all economic traffic. The Western European countries

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regularly scheduled air services between the two countries were discontinued.

Service between Albania and the European Satellite countries was reduced. Fearing complete air isolation, Albania approached Italy for air transportation agreements in an effort to become independent of the Bloc. These negotiations culminated in the establishment of a once-weekly service between Tirana and Rome by the Italian air carrier Alitalia. This service and a service provided by the Yugoslav Airline provide the only air service connections with non-Bloc countries. The Czechoslovakian, East German and Hungarian air lines operate sporadic flights from their respective capitals to Tirana, usually one weekly round trip.

B. Bulgaria

Early in 1962, electric operation of railroad passenger traffic was inaugurated on the newly electrified 156 kilometers of the route between Sofia and Plovdiv with eight electric locomotives imported from Czechoslovakia. Another route leading from Ruse on the Rumanian border, southward to Gorna Oryakhovitsa in the direction of Plovdiv, is also being electrified and completion of the project is expected in 1963. Both of these electrification projects will utilize alternating current.

In addition to the electrification projects, Bulgaria is attempting to modernize the railroad system by dieselizing the more intensively used routes, and to this end, 30 diesel locomotives have been ordered from the Simmering-Graz-Pauker firm in Austria. These are 1,100 horsepower, diesel-hydraulic units worth about 6 million Austrian schillings each.* In spite of the modernization program, Bulgaria imported 35 used steam locomotives from Yugoslavia during 1962. It is probable that these were used as replacements for some of Bulgaria's well-worn and overaged steam locomotives and will fill the gap until such time as electric and diesel units are acquired in sufficient quantity. The 1963 plan calls for a

* Schillings may be converted to US dollars at a rate of exchange of 25.77 schillings to \$1.00. This rate does not necessarily reflect the value of the schilling in terms of the dollar.

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9.8 percent increase over 1962 in tons carried by the railroad. In view of performance over the past five years, this appears to be a goal to shoot at rather than a realistic plan.

Although highway transport by motor vehicle has almost tripled during the past five years, the average length of haul has actually decreased to about 16 kilometers in 1962. This implies that a considerable amount of farm-to-market traffic and feeder services to the railroads (replacing the primitive horse and wagon services) have been motorized. Intercity motor vehicle traffic continues not to be a significant factor in the Bulgarian transportation system.

The Bulgarian Airline received 2 Il-18 aircraft during 1962, thereby bringing the total inventory of transport aircraft to 17 units. A third Il-18, on order for some time, had not been delivered by the end of December 1962. No changes in domestic routes and services were observed during 1962, but a new international service to Moscow via Bucharest and Kiev was inaugurated in November. By 1965, international routes will be expanded to provide services between Sofia-Paris; Sofia-Istanbul, Beirut and Bagdad; Sofia-Athens, Cairo; and between Sofia and Rome via Tirana. The Bulgarian Airline has announced plans to expand domestic services to reach the remote mountainous areas of the country by helicopter. A new Civil Aviation Law was enacted in December 1962, replacing the law of 1948.

C. Czechoslovakia

The Czechoslovakian railroad system experienced a particularly troublesome year and failed to achieve the planned goal for freight traffic by a considerable amount. Various factors external to railroad management, such as severe weather conditions during the first quarter of 1962, and erratic production where one locality failed to fulfill production goals while another locality over-fulfilled production goals, brought about an erratic demand for service. A surplus of transport equipment existed, therefore, in some areas and a critical shortage developed in others. Moreover, shippers and receivers failed to load and unload freight cars within the prescribed time allowed for such operations, preferring to

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pay high demurrage charges rather than pay overtime wages or employ additional labor. The turnaround time of freight cars which had averaged about 3.99 days in 1961, increased to more than 4.5 days in 1962, and the railroads were incapable of providing all requirements for freight cars at the time and place needed. Inadequate maintenance of track and equipment also contributed to delays and further complicated the situation.

The situation became so serious that the Ministry of Transport came under severe criticism in the press -- so severe, in fact, that the Minister of Transport and Communications was dismissed from his post and the ministry reorganized providing for two ministries -- one for transportation and the other for communications. All of the difficulties which plagued the railroad system during 1962 continued through the first quarter of 1963 and have even been compounded by unusually severe weather conditions. Military troops in significant numbers were called out to assist in the clearance of snow on the railroads, but late in March it was announced that the railroads were performing at about 10 percent below planned goals for the first quarter.

The electrification program progressed during 1962 and, at the end of the year, a total of about 1,200 kilometers of route had been electrified. It has been reported that 30 percent of the freight traffic in Czechoslovakia is handled on the electrified portions of the railroad route. If true, traffic density on the 1,200 kilometers of electrified route is about 13 million ton kilometers per route kilometer, or slightly above the average railroad freight traffic density in the USSR. Another 5 percent of the traffic is handled by diesel traction, while the remaining 65 percent is handled by steam.

Electrification of the last section of the Friendship route leading to Cieerna nad Tisou on the USSR border was completed, thus providing the first electrified railroad connection between the USSR and the European Satellites. Also completed was the last section of the Usti nad Labem route leading to Decin on the

East German border, thus providing an electrified route from the USSR to the East German border. Another section in the Ostrava region leading to the Polish border is nearing completion.

The newly completed portion of the Friendship pipeline in Czechoslovakia carried about 2.5 million tons during 1962. Although this is only .05 percent of the total traffic carried in Czechoslovakia, it represents about 1,240 trains at 40 tons per car and 50 cars per train, and therefore provided some relief for the railroad system.

Czechoslovakia acquired 2 Il-18 aircraft and 1 Tu-104 during 1962. A Bristol Britannia was also leased from Cubana Airlines for an indefinite period of time, thereby bringing the fleet up to a total of 37 aircraft. Czechoslovakia leads all the European Satellite countries in civil air transport, and accounted for over 43 percent of the passengers carried and almost 70 percent of the freight traffic carried in all of these countries during 1962. Although the volume of air transport has risen rapidly during the past five years, air travel is still used principally by government and business officials and priority freight shipments rather than by the general public or for normal freight traffic. This is particularly true on foreign flights and applies almost completely to flights outside of the Soviet Bloc. Plans for the expansion of the civil air fleet have not been announced and no information is available on plans for the expansion of routes. However, the acquisition in 1962 of three new high performance aircraft* suggests that service on some international routes will be expanded during 1963.

D. East Germany

The East German railroads failed to achieve the planned goal by only about 1 million tons during 1962. Although the turnaround time of freight cars was reduced and the average load per car increased, there were numerous instances of a freight car shortage, due in large measure to the failure of shippers and receivers

* For the purpose of this report, a high performance aircraft is defined as a jet or turbo-prop aircraft.

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to load and unload expeditiously. A shortage of both switching and main line locomotives is also evident. Press reports state that the type 74 light steam locomotives built in 1914 for Berlin city traffic, are still in use as switching locomotives and will remain indefinitely because of a shortage of more modern equipment. About 15 new electric locomotives from domestic production were delivered to the railroads during 1962, and another 42 are scheduled for delivery in 1963. Faulty transformers on these new locomotives have reportedly caused a number to be withdrawn from service temporarily. About 500 freight cars were imported from Belgium and about 1,000 tank cars have been leased from the USSR to haul crude oil from the Polish-USSR border to East Germany. Electrification of the route south of Leipzig is continuing, and a 24 kilometer section from Altenburg to Crimmitschau was completed during the year, thus bringing the total of electrified route to 797 kilometers including the Berlin S-Bahn routes.

Experiments with gauge changing wheel sets continued, and a train of 40 tank cars has completed 100 thousand kilometers of testing between East Germany and the USSR. Another train of 40 gondola cars carrying ore from the USSR is presently undergoing tests. There is no evidence, however, that gauge changing wheel sets are being produced in significant quantity, so it is probable that they are still in the research, testing and development stage.

Although highway transport showed a substantial gain in 1962, the average length of haul of 18 kilometers clearly indicates that it is predominantly a rail feeder service with little significance as an intercity carrier of freight. Inland water transport declined for the fifth consecutive year.

Railroad freight traffic is scheduled to reach 272 million tons in 1963, an increase of almost five percent over 1962. Highway traffic by motor vehicle is scheduled to increase by six percent over 1962. However, the extreme cold wave which started in late December 1962 and continued into the middle of March 1963, may have cancelled all hopes of achieving those goals. In January alone, railroad and highway traffic were 20 and 25 percent respectively below the 1962

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figure. As late as March 1963, 30 trains destined for West Berlin were stored at West German terminals near Helmstedt because the East German railroads were unable to furnish locomotives to move them. The inland waterways which froze in late December, were not opened for traffic until 13 March 1963. It is probable, therefore, that the 1963 plan will not be fulfilled.

The East German Airlines received 2 Il-18 aircraft during 1962, bringing the total of that model of high performance aircraft up to 5, and a total fleet of all types to 40 aircraft. No significant change in the domestic routes or services was observed during 1962, but new interline agreements were concluded with the North Vietnam Airlines, Turkish Airlines, Iraqi Airways, the Indian Airlines Corporation, and Air Afrique. There is no indication, however, that East German airline services will be inaugurated to those countries in the near future. The Berlin-Warsaw service by East German Airlines was re-established on 5 January 1963, after having been suspended in 1960 for lack of traffic. East German aircraft will provide service on Tuesday and Thursday, while the Polish Airlines will fly the route on the other days of the week, thus providing daily service between Berlin and Warsaw. A new passenger air terminal was opened on 23 July 1962 at the Schoenefeld airport in Berlin. Also completed was a new airport hotel with 12 single and 57 double rooms. Two lanes of a new four-lane highway connecting Schoenefeld with the Berlin Autobahn ring were completed and officially opened to traffic on 6 October 1962. This highway permits travel between the airport and West Berlin without transiting East Berlin.

E. Hungary

The railroad electrification program in Hungary is proceeding and a short section of 57 kilometer from Fuzesabony to Miskolc was completed during 1962. This electrification is on the main route from Budapest to Satoraljaújhely on the Czechoslovakian border, and only 84 kilometers of the route remain to be electrified. When the last section is completed, the route will connect with the electrified system in Czechoslovakia and thence to the Czechoslovakian -- USSR border

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at Cierna nad Tisou. The significance of this route is that it will provide an electrified service from the USSR to Vienna via Budapest, ~~as the route goes through~~, as the route from Budapest to Vienna has been electrified for some time.

At present, the Hungarians are using an electric locomotive produced by the Klement Gottwald Factory at Budapest. However, seven 3,000 horsepower locomotives have been ordered from a consortium of Western European producers, and Hungary has also obtained a license to produce that locomotive domestically. Hungary has also ordered 20 diesel-electric locomotives from Sweden which are scheduled for delivery in early 1963.

The 130 kilometer Hungarian section of the CEVA pipeline was completed during 1962, and the first consignment of crude oil was pumped through the line on 18 September 1962. The Hungarians expect to receive 2.5 to 3 million tons of crude oil through the line in 1963.

The Hungarian Airlines did not acquire any new high performance aircraft during 1962. Moreover, one Il-18 was lost in a crash near Paris on 23 November 1962, which resulted in the death of the crew of 8 and 13 passengers. Although a modest gain was recorded in freight transport, passenger traffic declined by about 27 thousand passengers, or about 17 percent compared with 1961. No expansion of civil air transport services was noted during 1962.

F. Poland

Electrification of the railroad system is progressing in Poland. About 170 kilometers were completed in 1962, bringing the total of electrified routes to 1,342 kilometers. The section from Kutno to Konin consisting of 79 kilometers was completed, and electrification is continuing in the direction of Poznan. Also, the 92 kilometer section from Podleze to Debica was completed and electrification is continuing toward Medyka on the USSR border. The electrification of the route from Katowice to the Czechoslovakian border is underway, and electrified train operations between Warsaw and Prague will probably be established before the end of 1963. The Polish railroads received 20 electric locomotives

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from the UK during 1962, and are preparing to produce the locomotive domestically under license from the British supplier. Also, 37 electric locomotives were obtained from domestic production during 1962.

The railroad system failed to fulfill the plan by about 4 million tons or about one percent. The Minister of Transportation and Communications stated in January 1963, nevertheless, that 1962 had been a crisis year for the Polish railroads. Unusually heavy snow storms in the first quarter of the year, followed by floods in April and May, so thoroughly disrupted loading and unloading, as well as transport operations, that the railroads were unable to supply adequate services during that period. Moreover, they were unable to make up the loss during the remaining seven months of the year. Transit traffic was about one million tons more than the Polish railroads had planned and prepared for. An inadequate supply of locomotives and rolling stock was felt throughout the year. All of these factors point to the fact that the margin of reserve capacity is much too small to keep pace with any fluctuation in demand for transportation service.

The announced plan for railroad traffic in 1963 is 308 million tons on the standard gauge railroad system. This is an increase of 4.8 percent over the 294 million tons carried in 1962. During the first quarter of 1963, the Polish railroad system experienced unusual difficulties due in part to a severe cold wave and heavy snow. Drifts up to six feet were reported and all trains were delayed. Many passenger train services were suspended. Even the Warsaw-Berlin express train was running up to 12 hours late on a normal six hour run. The railroads did not have an adequate supply of reserve rolling stock to offset the delays occasioned by adverse weather. As a consequence, coal supplies at power plants and factories dropped to a dangerously low level, thereby slowing production of goods to the point where the entire 1963 production plan for some goods is in jeopardy. It is doubtful that the losses during the first quarter can be overcome during the remainder of the year, so it is probable that the transportation plan will

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fall far short of the planned goal in 1963.

The Polish Airlines purchased 3 Vickers Viscount 804 turboprop aircraft from the British Aircraft Corporation, all of which were delivered in November and December 1962. However, on 19 December, one of these aircraft crashed as it was about to land at the Okocie Airport in Warsaw, killing everyone aboard, including 28 passengers and a crew of five. The Polish civil air fleet now consists of 34 aircraft, of which 5 are high performance aircraft. The latter consist of 2 Viscounts and 3 Il-18's.

There was virtually no change in either domestic or international routes during 1962. However, Polish Airlines have announced that the Warsaw-Paris-Athens route will be extended to Cairo early in 1963, and later in the spring it will be extended to New Delhi. A thorough reconstruction of the Okocie Airport in Warsaw is underway. The reconstruction and modernization is designed to enable the airport to handle the largest jet aircraft in use today.

G. Rumania

The Rumanian railroad system failed to fulfill the 1962 plan by about 1 million tons, about 4 percent. There was no evidence of any serious shortcomings in railroad transport or, for that matter, in the entire transportation system, so it is probable that the 1962 plan was over ambitious and the economy failed to generate the traffic, particularly agricultural traffic, upon which the plan was based.

The rate of growth in railroad transport during the past three years is more than adequate for successful achievement of the six year plan through 1966. The performance during the past year is only 7.3 percent below the goal planned for 1965, so a nominal increase of about 2.5 percent per year for the three years remaining in the plan will be ample for fulfillment and should be achieved with no difficulty.

The only electrification project in Rumania is on the route between Ploesti and Bresov where steep grades restrict the train weights which can be handled by

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steam or diesel locomotives. At present, Rumania is negotiating with firms in Sweden and Switzerland for the purchase of electric locomotives, but no firm orders had been placed by the end of 1962.

Rumania appears to be devoting more effort toward dieselizeation rather than electrification, and during 1962, 35 diesel-electric locomotives were delivered to the railroads. This development is logical in view of the availability of petroleum products in Rumania. There are now 53 diesel-electric locomotives in Rumania, 47 of which have been produced domestically under a license from a Swiss producer. Romanian experience since the dieselizeation program started has indicated that 10 diesel-electric locomotives can replace 23 steam locomotives.

Rumania, like all countries in Eastern Europe, experienced considerable difficulty in providing adequate transportation during the first quarter of 1963. A detailed plan for transportation during 1963 has not yet been announced, but it is probable that the plan, when announced, will be scaled downward to compensate for the losses suffered during the first quarter.

Rumania received 2 Il-18 aircraft in 1962. However, one Il-18 crashed in Cyprus early in the year so the net gain was only one high performance aircraft in 1962. No changes in domestic or intra-Bloc routes and services were observed. A new air agreement was concluded, however, between Rumania and France which provides for the operation of Rumanian and French air transport carriers of passengers, freight and mail between Bucharest and Paris. The Romanian Airlines has had regularly scheduled flights to Paris for some time. Thus, the present agreement merely regularizes existing traffic and, from the Rumanian point of view, enhances Rumanian prestige in international civil air transport. French aircraft are not operating into Rumania at present, although the new agreement permits such operations.

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APPENDIX

STATISTICAL TABLES

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Table 1
European Satellites: Freight Traffic Performance
by Major Civil Air Carriers a/
1958-1962

	Thousand Tons Carried					Million Ton Kilometers				
	1958	1959	1960	1961	1962	1958	1959	1960	1961	1962
Bulgaria	1.150	0.943	0.680	0.772	1.177	0.445	0.422	0.299	0.421	0.947
Czechoslovakia	9.210	11.930	15.300	16.960	23.900	6.840	9.160	13.780	16.470	21.677
Hungary	0.780	0.980	1.600	1.440	1.696	0.600	0.740	1.200	1.600	2.278
Poland	2.780	3.050	3.500	4.050	4.932	2.250	2.610	3.390	3.690	5.255
Rumania	2.300	3.400	3.300	3.000	3.800	1.390	1.880	1.490	2.050	3.198
Total	36.220	20.303	24.380	26.222	35.505	11.615	14.812	20.342	24.231	33.556

a. Excluding East Germany, for which reliable data are not available.

Table 2
 European Satellites: Passenger Traffic Performance, by
 Major Civil Air Carriers 1958-1962

	1958	Thousand Passengers Carried			1962	1958	Million Passenger Kilometers			1962
		1959	1960	1961			1959	1960	1961	
Bulgaria	112	148	206	215	268	44	64	89	96	115
Czechoslovakia	408	568	754	760	856	193	269	390	456	514
East Germany	153	181	256	213	300	74	96	165	159	223
Hungary	114	135	152	158	131	36	48	75	90	93
Poland	132	156	175	200	225	75	94	109	130	146
Rumania	107	120	198	164	217	55	80	86	110	130
Total	1,026	1,308	1,741	1,710	1,997	477	651	914	1,041	1,221

Table 3
European Satellites: Inventory of Civil Aircraft
31 December 1962 a/

	<u>Li-2</u>	<u>IL-14</u>	<u>Tu-104A</u>	<u>Convair</u>	<u>Viscount (804)</u>	<u>IL-18</u>	<u>Bristol Britannia</u>	Total
Bulgaria	5	10	0	0		2		17
Czechoslovakia	0	25	5	0		6	1 b/	37
East Germany	0	35	0	0		5		40
Hungary	12	10	0	0		2		24
Poland	10	15	0	4	2	3		34
Romania	15	25	0	0		3		43
Total	42	120	5	4	2	21	1 b/	195

a. Excluding various liaison and executive type aircraft used for agricultural and administrative purposes.
b. Leased for an indefinite period from Cubana Airlines.

Table 4

European Satellites: Estimated Freight Traffic Performance
of Modern Inland Transport, in Ten Kilometers a/
1958-1962

Country and Mode of Transportation	1958	Billion Metric Ton-Kilometers a/				1962	Change		Share of Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961	1962		1961/1960 (Percent)	1962/1961 (Percent)	
<u>European Satellites</u>									
Railroad	162.495	172.923	187.008	198.682	210.076	+6.0	+5.7		
Motor Vehicle	16.611	18.748	21.039	23.343	25.622	+11.1	+9.0	85.4	10.4
Inland Water b/	6.711	6.695	7.905	7.779	8.057	-1.7	+3.5		3.2
Pipeline c/	0.778	0.692	1.019	0.946	2.026	-7.2	+113.5		1.0
Total all modes	<u>186.595</u>	<u>199.258</u>	<u>216.972</u>	<u>230.750</u>	<u>245.781</u>	+6.3	+6.5		100.0
<u>Albania</u>									
Railroad	0.34	0.046	0.055	0.075	0.076	+36.3	+1.3		
Motor Vehicle	0.234	0.291	0.328	0.378	0.422	+12.2	+11.6	15.3	84.7
Inland Water	0	0	0	0	0				
Total	<u>0.268</u>	<u>0.337</u>	<u>0.383</u>	<u>0.453</u>	<u>0.498</u>	+18.2	+9.9		100.0
<u>Bulgaria</u>									
Railroad	5.243	6.289	6.981	7.447	8.194	+6.6	+6.6		
Motor Vehicle	1.150	1.375	2.039	2.420	2.500	+18.6	+3.3	72.4	22.1
Inland Water	0.391	0.444	0.615	0.585	0.611	-4.9	+4.4		5.5
Total	<u>6.784</u>	<u>8.108</u>	<u>9.635</u>	<u>10.452</u>	<u>11.305</u>	+8.4	+8.1		100.0

Table 4 (Continued)
**European Satellites: Estimated Freight Traffic Performance
of Modern Inland Transport, in Ton Kilometers a/
1958-1962**

Country and Mode of Transportation	1958	Billion Metric Ton-Kilometers a/				1962	Change 1961/1960 (Percent)	Share of Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961	1962			
<u>Czechoslovakia</u>								
Railroad	42.674	44.101	47.407	50.674	52.296	+6.8	+3.2	84.8
Motor Vehicle	3.980	4.780	5.108	5.673	6.370	+11.0	+12.2	10.3
Inland Water	1.784	1.736	1.962	1.899	2.000	-3.3	+5.3	3.2
Pipeline	0	0	0	0	1.000			1.7
Total	<u>48.438</u>	<u>50.617</u>	<u>54.477</u>	<u>58.246</u>	<u>61.666</u>	+6.8	+5.8	<u>100.0</u>
<u>East Germany</u>								
Railroad	30.101	31.648	32.860	34.732	37.410	+5.3	+7.7	82.7
Motor Vehicle	4.147	4.622	4.984	5.269	5.653	+7.7	+7.2	12.5
Inland Water	2.398	2.376	2.225	2.202	2.162	-2.3	-1.9	4.8
Total	<u>36.646</u>	<u>38.646</u>	<u>40.096</u>	<u>42.203</u>	<u>45.235</u>	+5.2	+7.1	<u>100.0</u>
<u>Hungary</u>								
Railroad	10.235	11.624	13.337	13.858	14.587	+3.1	+5.2	81.8
Motor Vehicle	1.060	1.120	1.580	1.669	1.650	+6.9	+9.5	10.3
Inland Water	.857	.889	1.308	1.311	1.377	+0.2	+5.0	7.9
Total	<u>12.092</u>	<u>13.703</u>	<u>16.225</u>	<u>16.858</u>	<u>17.814</u>	+3.9	+5.6	<u>100.0</u>

Table 4 (Continued)

European Satellites: Estimated Freight Traffic Performance
 of Modern Inland Transport, in Ton Kilometers a/
 1958-1962

Country and Mode of Transportation	1958	Billion Metric Ton-Kilometers a/				1961/1960 (Percent)	1962/1961 (Percent)	Share of Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961	1962			
<u>Poland</u>								
Railroad	57.190	61.670	66.547	69.689	73.661	+4.7	+5.6	91.0
Motor Vehicle	4.600	5.000	5.400	6.000	6.400	+11.1	+6.6	7.9
Inland Water	0.696	0.639	0.904	0.855	0.814	-5.5	-4.8	2.1
Total	62.486	67.309	72.851	76.544	80.875	+5.6		100.0
<u>Romania</u>								
Railroad	17.018	17.475	19.821	22.207	23.852	+12.0	+7.4	83.9
Motor Vehicle	1.500	1.550	1.600	1.914	2.427	+19.6	26.7	8.5
Inland Water	0.585	0.611	0.865	0.927	1.093	+7.1	+16.8	3.8
Pipeline	0.778	0.892	1.019	0.946	1.026	-7.2	+8.4	3.8
Total	19.881	20.528	23.305	25.994	28.398	+11.5	+9.5	100.0

a. Including domestic, export, import and transit traffic.

b. Including traffic performed by European Satellite inland water craft on inland waterways in Western Europe.

c. Romania only through 1961. Includes Czechoslovakia and Romania in 1962.

Table 5
European Satellites: Estimated Freight Traffic Performance of
Modern Inland Transport in Tons Carried a/
1958-1962

Country and Mode of Transportation	1958	Million Metric Tons Carried				1962	Change 1961/1960 (Percent)	Share of Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961				
<u>European Satellites</u>								
Railroad c/	827.002	865.611	931.403	977.740	1,011.047	+4.8	+3.4	36.2
Motor Vehicle a/	1,119.833	1,295.869	1,473.814	1,642.923	1,787.315	+11.4	+6.34	62.6
Inland Water Fleet b/	25.189	25.115	24.970	24.301	24.579	-0.3	+1.1	0.9
Pipeline c/	3.704	4.514	5.586	5.317	9.407	+4.8	+76.9	0.3
Total all Modes	<u>1,975.728</u>	<u>2,191.136</u>	<u>2,435.773</u>	<u>2,650.351</u>	<u>2,792.348</u>	+8.8	+5.36	<u>100.0</u>
<u>Albania</u>								
Railroad	0.566	0.745	0.875	1.201	1.279	+37.2	+6.4	7.8
Motor Vehicle	8.008	10.272	10.278	13.094	15.215	+36.0	+16.1	92.2
Inland Water	0	0	0	0	0			
Total	<u>8.574</u>	<u>11.017</u>	<u>11.153</u>	<u>14.295</u>	<u>16.494</u>	+28.1	+15.3	<u>100.0</u>
<u>Bulgaria</u>								
Railroad	29.724	35.134	38.409	40.545	41.518	+5.5	+2.4	26.8
Motor Vehicle	68.290	63.300	128.287	152.000	156.300	+18.4	+2.6	78.3
Inland Water	1.150	1.300	1.556	1.532	1.634	-1.6	+6.6	0.9
Total	<u>99.164</u>	<u>119.734</u>	<u>168.252</u>	<u>194.077</u>	<u>199.452</u>	+15.3	+2.7	<u>100.0</u>

Table 5 (Continued)
**European Satellites: Estimated Freight Traffic Performance of
 Modern Inland Transport in Tons Carried a/
 1958-1962**

Country and Mode of Transportation	1958	Million Metric Tons Carried			1962	Change		Share of Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961		1961/1960 (Percent)	1962/1961	
<u>Czechoslovakia</u>								
Railroad	174.353	180.510	194.077	205.695	208.575	+5.9	+1.4	
Motor Vehicle	334.800	395.100	428.401	506.220	538.110	+18.1	+6.2	27.6
Inland Water	3.247	3.128	3.530	3.747	3.900	+6.1	+4.0	71.4
Pipeline	0	0	0	0	2.500			0.5
Total	<u>512.400</u>	<u>578.738</u>	<u>626.608</u>	<u>715.662</u>	<u>753.085</u>	<u>+14.3</u>	<u>+5.2</u>	0.5
<u>East Germany</u>								100.0
Railroad	227.199	229.197	237.789	248.714	259.800	+4.5	+4.4	
Motor Vehicle	226.535	256.697	270.346	286.679	306.200	+6.0	+6.8	44.9
Inland Water	14.863	14.478	12.633	11.944	11.400	-5.5	-4.6	53.0
Total	<u>468.597</u>	<u>500.372</u>	<u>520.768</u>	<u>547.337</u>	<u>577.400</u>	<u>+5.1</u>	<u>+5.4</u>	2.1
<u>Hungary</u>								100.0
Railroad	78.517	86.500	95.879	98.635	101.343	+4.2	+2.7	
Motor Vehicle	71.200	86.500	121.500	128.000	134.500	+5.2	+5.0	42.4
Inland Water	1.891	2.104	2.385	2.355	2.456	-9.2	+4.2	56.4
Total	<u>151.608</u>	<u>175.104</u>	<u>219.765</u>	<u>228.990</u>	<u>238.299</u>	<u>+5.1</u>	<u>+4.0</u>	1.2
								100.0

Table 5 (Continued)

European Satellites: Estimated Freight Traffic Performance of
Modern Inland Transport in Tons Carried a/
1958-1962

Country and Mode of Transportation	1958	Million Metric Tons Carried			1962	Change		Share of Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961		1961/1960 (Percent)	1962/1961	
<u>Poland</u>								
Railroad	250.000	264.551	286.882	297.690	308.700	+43.7	+3.3	
Motor Vehicle	332.000	361.000	392.000	413.600	435.200	+5.5	+5.2	41.3
Inland Water	2.480	2.531	2.951	2.762	2.933	-6.5	+6.1	58.2
Total	<u>584.480</u>	<u>628.082</u>	<u>681.833</u>	<u>714.052</u>	<u>746.833</u>	<u>+4.7</u>	<u>+4.5</u>	0.5
<u>Rumania</u>								
Railroad	66.643	68.974	77.492	85.260	89.832	+10.0	+5.3	
Motor Vehicle	79.600	103.000	123.000	143.400	161.800	+16.5	+12.8	34.4
Inland Water	1.558	1.574	1.914	1.961	2.256	+2.4	+15.0	62.0
Pipeline	3.704	5.541	5.586	5.317	6.907	-4.8	+29.9	0.9
Total	<u>150.905</u>	<u>178.089</u>	<u>207.992</u>	<u>235.938</u>	<u>260.795</u>	<u>+13.4</u>	<u>+10.5</u>	2.7
								<u>100.0</u>

a. Including domestic, export, import and transit traffic as well as a duplication of foreign trade traffic moving in the European Satellites. Tonnage also is duplicated when moved by more than one mode of transportation.

b. Including domestic, export, import and transit traffic as well as traffic carried on European Satellite inland water craft or inland waterways in Western Europe.

c. Rumania only through 1961. Includes Czechoslovakia and Rumania in 1962.

Table 6

European Satellites: Estimated Passenger Traffic Performance by Railroad
and Motor Vehicle Transport in Passenger Kilometers a/
1958-1962

Country and Mode of Transportation	1958	Billion Passenger Kilometers				1962	Change		Share Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961	1962		1961/1960 (Percent)	1962/1961 (Percent)	
<u>European Satellites</u>									
Railroad	103.484	101.534	100.256	100.512	101.109	+0.2	+0.5		
Motor Vehicle	28.118	32.940	36.789	43.185	47.816	+11.9	+10.7	67.8	32.2
Total all Modes	<u>131.602</u>	<u>134.474</u>	<u>137.045</u>	<u>143.697</u>	<u>148.925</u>	<u>+4.1</u>	<u>+3.6</u>	<u>100.0</u>	
<u>Albania</u>									
Railroad	0.085	0.086	0.090	0.092	0.086	-3.9	+4.8		
Motor Vehicle	0.125	0.153	0.147	0.149	0.164	+1.3	+10.0	34.4	65.6
Total	<u>0.210</u>	<u>0.239</u>	<u>0.237</u>	<u>0.231</u>	<u>0.250</u>	<u>-2.6</u>	<u>+8.2</u>	<u>100.0</u>	
<u>Bulgaria</u>									
Railroad	3.088	3.243	3.617	3.839	3.701	+6.1	+3.6		
Motor Vehicle	1.065	1.969	2.735	3.198	3.671	+13.2	+14.4	50.2	49.8
Total	<u>4.153</u>	<u>5.212</u>	<u>6.352</u>	<u>7.037</u>	<u>7.372</u>	<u>+12.3</u>	<u>+4.6</u>	<u>100.0</u>	

Table 6 (Continued)

**European Satellites: Estimated Passenger Traffic Performance by Railroad
and Motor Vehicle Transport in Passenger Kilometers p/
1958-1962**

Country and Mode of Transportation	1958	Billion Passenger Kilometers				1962	Change 1961/1960 (Percent)	Share Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961	1962			
<u>Czechoslovakia</u>								
Railroad	17.369	18.574	19.335	19.978	21.300	+3.3	+0.6	
Motor Vehicle	10.422	11.279	12.562	13.844	14.900	+10.2	+7.6	
Total	<u>27.791</u>	<u>29.853</u>	<u>31.897</u>	<u>33.822</u>	<u>36.200</u>	<u>+6.0</u>	<u>+7.0</u>	<u>100.0</u>
<u>East Germany</u>								
Railroad	21.399	21.388	21.288	19.540	17.178	-8.3	-12.1	
Motor Vehicle	7.588	8.851	8.279	10.583	11.200	+28.1	+6.7	
Total	<u>28.987</u>	<u>30.239</u>	<u>29.567</u>	<u>30.123</u>	<u>28.378</u>	<u>+1.9</u>	<u>+5.8</u>	<u>100.0</u>
<u>Hungary</u>								
Railroad	11.839	12.791	14.247	14.766	15.666	+3.4	+6.0	
Motor Vehicle	2.893	3.398	4.053	4.597	5.136	+13.4	+11.7	
Total	<u>14.723</u>	<u>16.189</u>	<u>18.301</u>	<u>19.363</u>	<u>20.802</u>	<u>+5.6</u>	<u>+7.4</u>	<u>100.0</u>

Table 6 (Continued)

European Satellites: Estimated Passenger Traffic Performance by Railroad
and Motor Vehicle Transport in Passenger Kilometers ^{a/}
1958-1962

Country and Mode of Transportation	1958	Billion Passenger Kilometers				1962	Change 1961/1960 (Percent)		Share Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961			1962/1961 (Percent)		
Poland									
Railroad	38.063	34.894	30.942	30.850	30.973	+0.4	+0.4		
Motor Vehicle	5.150	6.021	7.521	9.124	10.700	+20.1	+11.0	74.2	25.8
Total	42.213	41.185	38.536	39.974	41.739	+3.7	+4.8	100.0	
Lithuania									
Railroad	11.619	10.558	10.737	11.457	12.205	+6.6	+5.5		
Motor Vehicle	875	9.299	11.612	11.606	11.979	+19.0	+3.6	86.0	14.0
Total	12.494	11.257	12.166	13.173	14.184	+8.1	+7.6	100.0	

a. Including domestic and international traffic.

Table 7

European Satellites: Estimated Passenger Traffic Performance by Railroad
and Motor Vehicle Transport in Numbers Carried ^{a/}
1958-1962

Country and Mode of Transportation	1958	Million Passenger Carried			1962	Change		Share Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961		1961/1960 (Percent)	1962/1961 (Percent)	
<u>European Satellites</u>								
Railroad	2,892.105	3,138.834	3,115.316	3,068.520	3,036.169	-1.1	-1.1	44.3
Motor Vehicle	2,040.446	2,463.059	2,888.945	3,232.039	3,603.120	+11.6	+17.6	55.7
Total	4,932.551	5,601.893	6,004.261	6,300.559	6,639.289	+14.9	+13.5	100.0
<u>Albania</u>								
Railroad	2.398	2.368	2.498	2.317	2.623	-7.7	+13.2	40.6
Motor Vehicle	2.352	2.574	2.973	3.418	3.845	+11.6	+11.4	59.4
Total	4.750	4.942	5.471	5.735	6.468	+14.8	+12.7	100.0
<u>Bulgaria</u>								
Railroad	66.984	71.485	78.980	81.800	79.346	+8.5	+6.5	16.3
Motor Vehicle	42.776	200.859	284.719	346.027	407.620	+21.5	+17.8	83.7
Total	109.760	272.344	363.699	426.827	486.966	+17.6	+14.8	100.0

Table 7 (Continued)

European Satellites: Estimated Passenger Traffic Performance by Railroad
and Motor Vehicle Transport in Numbers Carried ^{a/}
1958-1962

Country and Mode of Transportation	1958	Million Passenger Carried			1962	Change		Share Each Mode of Transportation, 1962 (Percent)
		1959	1960	1961		1961/1960 (Percent)	1962/1961 (Percent)	
<u>Czechoslovakia</u>								
Railroad	523.538	558.565	580.557	587.536	639.300	+1.2	+7.1	
Motor Vehicle	974.359	1,049.878	1,174.436	1,286.473	1,406.145	-9.5	+9.3	31.3
Total	<u>1,497.897</u>	<u>1,607.443</u>	<u>1,754.993</u>	<u>1,774.009</u>	<u>2,045.445</u>	<u>+1.0</u>	<u>+15.3</u>	68.7
<u>East Germany</u>								
Railroad	980.000	958.000	943.000	831.000	693.800	-11.9	-16.6	
Motor Vehicle	532.000	611.000	689.000	738.000	992.000	+12.9	+34.4	41.2
Total	<u>1,512.000</u>	<u>1,569.000</u>	<u>1,632.000</u>	<u>1,569.000</u>	<u>1,685.800</u>	<u>-3.9</u>	<u>+5.7</u>	58.8
<u>Hungary</u>								
Railroad	393.400	431.700	478.900	492.200	522.200	+2.7	+6.0	
Motor Vehicle	216.100	269.400	332.300	376.800	423.200	+13.3	+12.3	55.2
Total	<u>609.500</u>	<u>701.100</u>	<u>811.200</u>	<u>869.000</u>	<u>945.400</u>	<u>+7.1</u>	<u>+8.7</u>	44.8
								100.0

Table 7 (Continued)

European Satellites: Estimated Passenger Traffic Performance by Railroad
and Motor Vehicle Transport in Numbers Carried ^{a/}
1958-1962

Country and Mode of Transportation	1958	1959	1960	1961	1962	Change		Share Each Mode of Transportation, 1962 (Percent)
						1961/1960 (Percent)	1962/1961 (Percent)	
Poland								
Railroad	963.181	904.572	816.581	835.967	863.000	+2.3	+3.2	
Motor Vehicle	231.461	280.893	333.760	401.595	477.898	+29.3	+19.0	64.3
Total	1,194.662	1,185.465	1,150.341	1,237.562	1,340.898	+7.5	+8.3	35.7
								100.0
Rumania								
Railroad	232.604	213.844	214.800	237.700	235.900	+10.6	-0.8	
Motor Vehicle	41.378	48.455	71.757	79.726	92.412	+11.1	+15.9	71.6
Total	273.982	262.299	286.557	317.426	328.312	+10.7	+3.4	28.4
								100.0

^{a/} Including domestic and international traffic as well as multiple counting of passengers carried in international traffic. Total passenger carried also includes multiple counting when a passenger is carried by more than one mode of transportation.

Table 8
European Satellites: Selected Comparative Data
on Inland Transport Systems
1962

<u>Mode of Transportation and Unit</u>	<u>Albania</u>	<u>Bulgaria</u>	<u>Czechoslovakia</u>	<u>East Germany</u>	<u>Hungary</u>	<u>Poland</u>	<u>Rumania</u>	<u>Total a/</u>
<u>Railroad</u>								
Billion metric ton kilometers b/	0.076	8.194	52.296	37.410	14.587	73.661	23.852	210.076
Country share of total (Percent)	0.2	3.9	24.9	17.8	6.9	35.0	11.3	100
Million metric tons carried c/	1.279	41.518	208.575	259.800	101.343	308.700	89.832	1,011.047
Country share of total (Percent)	0.2	4.1	20.6	25.7	10.0	30.5	8.9	100.00
Route kilometers	169	4,151	13,139	16,174	8,932	26,869	10,981	80,415
Locomotives (Units)	9	682	5,199	5,980	2,542	5,888	3,021	23,519
Freight cars (Units)	710	28,000	141,000	149,525	66,750	257,474	61,700	705,159
Freight traffic density (Million metric ton kilometers per kilometer of route)	0.449	1.972	3.980	2.306	1.633	2.709	2.172	2.611
Average length of haul (Kilometers)	60	197	250	144	144	238	265	207
Billion passenger kilometers	0.086	3.701	21.300	17.178	15.666	30.973	12.205	101.109
Million passengers carried	2.623	79.346	639.300	693.800	522.200	863.000	235.900	3,036.169
Passenger traffic density (Million passenger kilometers per kilometer of route)	0.509	0.891	1.621	1.062	1.753	1.152	1.111	1.258
Total traffic density (Ton kilometers plus passenger kilometers per kilometer of route)	0.958	2.863	5.601	3.368	3.386	3.861	3.283	3.869
<u>Motor Vehicle</u>								
Billion metric ton kilometers	0.422	2.500	6.370	5.653	1.850	6.400	2.427	25.622

Table 8 (Continued)

European Satellites: Selected Comparative Data
on Inland Transport Systems
1962

Mode of Transportation and Unit	Albania	Bulgaria	Czechoslovakie	East Germany	Hungary	Poland	Rumania	Total a/
Million metric tons carried	15.215	156.300	538.110	306.200	134.500	435.200	161.800	1,747.315
Route kilometers	4,800	27,412	133,000	47,725	29,000	287,788	76,000	605,725
Kilometers of paved roads d/	480	6,190	13,000	12,800	6,880	37,061	5,150	81,561
Trucks (Units) e/	3,500	20,400	100,000	155,000	30,900	138,000	48,000	495,800
Inland Water f/								
Billion metric ton kilometers b/	0	0.611	2.000	2.162	1.377	0.814	1.093	8.057
Million metric tons carried	0	1.634	3.900	11.400	2.456	2.933	2.256	24.579
Route kilometers used by powered vessels g/	0							7.940
Pipeline								
Billion metric ton kilometers	Negl.	Negl.	1.000 h/	Negl.	Negl.	Negl.	1.026 i/	2.026
Million metric tons carried	Negl.	Negl.	2.500 h/	Negl.	Negl.	Negl.	6.907 i/	9.407
Route kilometers	Negl.	Negl.	400 j/	Negl.	130 k/	Negl.	3,140 l/	3,670

- a. Because of rounding, components may not add to the totals shown. b. Including domestic, export, import, and transit traffic.
 c. The total includes a duplication foreign trade traffic moving in the European Satellites as well as a duplication of tonnage when traffic is carried by more than one mode of transportation.
 d. A paved road is one that has been graded and surfaced with a water-resistant material or a material that facilitates drainage, including asphalt, concrete, and cobblestone.
 e. Civilian trucks only. f. Including traffic performed by European Satellite inland water craft on inland waterways in Western Europe.
 g. Excluding Albania. Only total route length is given to avoid duplicate counting of route distance of waterways used jointly by two countries.
 h. Crude oil imports from USSR only. i. Including domestic and export traffic only.
 j. Includes Czechoslovakian sections only of Friendship pipeline from USSR.
 k. Includes Hungarian section only of Friendship pipeline from USSR which was completed in September 1962.
 l. Includes 2,380 km of crude oil gathering lines and 760 km of product lines.